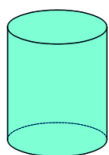
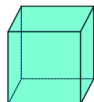
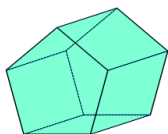


Prisms and Cylinders

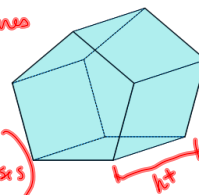
12-2

12-4

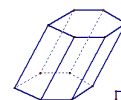
bases \cong polygons in // planeslateral faces *-not base*

lateral edges

altitudes (distance b/w bases)

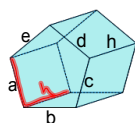
right prism *lateral edges \perp to bases*

oblique prism



Lateral Area--(L) or (LA)--sum of the areas of the lateral faces

Surface Area--(S) or (SA)--sum of the areas of all of the faces



$$LA = ph$$

$$ah + bh + ch + dh + eh$$

$$h(a + b + c + d + e)$$

$$LA = ph$$

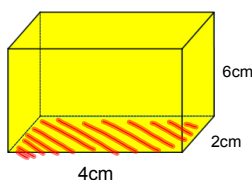
p = perimeter of base

$$SA = LA + 2B$$

B = area of the Base

$$V = Bh$$

ex 1:



$$p = 12\text{cm}$$

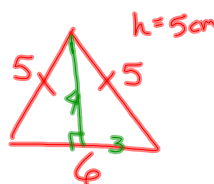
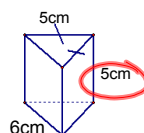
$$B = 8\text{cm}^2$$

$$LA = ph \quad 12 \cdot 6 = 72\text{cm}^2$$

$$SA = 72 + 2(8) = 88\text{cm}^2$$

$$V = 8 \cdot 6 = 48\text{cm}^3$$

ex 2:



$$p = 16\text{cm}$$

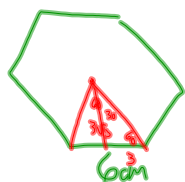
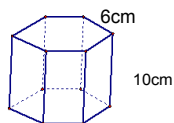
$$B = 12\text{cm}^2$$

$$LA = 16 \cdot 5 = 80\text{cm}^2$$

$$SA = 80 + 2(12) = 104\text{cm}^2$$

$$V = 12 \cdot 5 = 60\text{cm}^3$$

ex 3: Base is regular.



$$p = 36 \text{ cm}$$

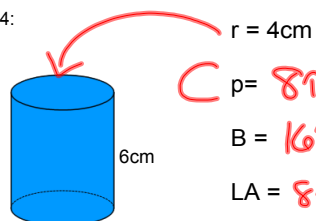
$$B = \frac{1}{2} 3\sqrt{3} \cdot 36 = 54\sqrt{3} \approx 93.5 \text{ cm}^2$$

$$LA = 360 \text{ cm}^2$$

$$SA = 547.1 \text{ cm}^2$$

$$V = 540\sqrt{3} \approx 935.3 \text{ cm}^3$$

ex 4:



$$C = 8\pi \text{ cm}$$

$$B = 16\pi \text{ cm}^2$$

$$LA = 8\pi \cdot 6 = 48\pi \text{ cm}^2$$

$$SA = 48\pi + 32\pi = 80\pi \text{ cm}^2$$

$$V = 16\pi \cdot 6 = 96\pi \text{ cm}^3$$

ex 5: Work backwards.

Cylinder

$$V = 768\pi \text{ u}^3$$

$$h = 12 \text{ units}$$

$$r = 8 \text{ u}$$

$$C = 16\pi \text{ u}$$

$$LA =$$

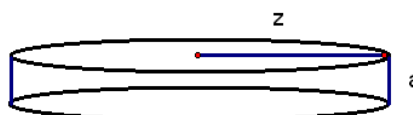
$$SA =$$

$$V = Bh$$

$$768\pi = 12B$$

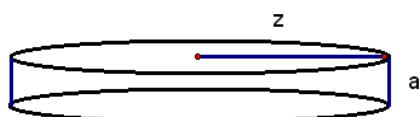
$$64\pi = B = \pi r^2$$

$$8 = r$$

Find the volume of a cylinder with a radius of z and a height of a .

$$V = \pi z^2 a$$

Find the volume of a cylinder with a radius of z and a height of a .



$$V = \pi z^2 a$$

$$= \pi z z a$$



HW

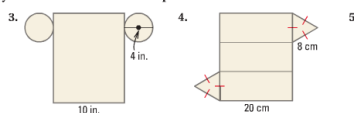
p806-809

#s 3, 4, 6-8, 14, 28a

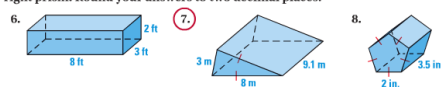
p823

#s 6, 7, 11, 18

USING NETS Find the surface area of the solid formed by the net. Round your answer to two decimal places.

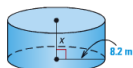


SURFACE AREA OF A PRISM Find the lateral area and surface area of the right prism. Round your answers to two decimal places.



ALGEBRA Solve for x given the surface area S of the right prism or right cylinder. Round your answer to two decimal places.

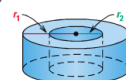
14. $S = 1097 \text{ m}^2$



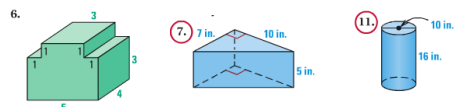
28. SURFACE AREA OF A RING The ring shown is a right cylinder of radius r_1 with a cylindrical hole of radius r_2 . The ring has height h .

- a. Find the surface area of the ring if r_1 is 12 meters, r_2 is 6 meters, and h is 8 meters. Round your answer to two decimal places.

~~b. Write a formula that can be used to find the surface area S of any cylindrical ring where $0 < r_2 < r_1$.~~



USING UNIT CUBES Find the volume of the solid by determining how many unit cubes are contained in the solid.



COMPOSITE SOLIDS Find the volume of the solid. The prisms and cylinders are right. Round your answer to two decimal places, if necessary.

